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Failures; 5 Reliability-Based Design and Design-by-Reliability Methodology; 6 Design Reliability Allocation and Evaluation Methods; 7 Human Error and Reliability Consideration in Mechanical Design; 8 Failure Rate Estimation Models for Various Mechanical Items; 9 Failure Data and Failure Data Collection Sources; References; Chapter 7 Product Design and Manufacturing Processes for Sustainability; 1 Introduction
2 Need for Sustainability Science and Its Applications in Product Design and Manufacture
3 Product Design for Sustainability; 4 Processes for Sustainability; 5 Case Study; 6 Future Directions; References; Chapter 8 Life-Cycle Design; 1 Historical Influences on Development of DFLL; 2 DFLL Definitions; 3 Motivations for DFLL; 4 Principles of DFLL; 5 Life-Cycle Design Methods; 6 Design for Life-Cycle Tools; 7 Implementation of DFLL; 8 Implementation Examples; 9 Future of DFLL; References; Chapter 9 Design for Maintainability; 1 Introduction; 2 Review of Probability and Random Variables
3 Review of System Reliability and Availability
4 Repairable Systems and Availability Analysis; References; Bibliography; Chapter 10 Design for Remanufacturing Processes; 1 Introduction to Remanufacturing; 2 Basic Remanufacturing Business Practice; 3 Remanufacturing Facility Processes; 4 Overarching Design Principles and Strategies Enhancing Reuse; 5 Hardware Design Guidelines; 6 Design for Remanufacturing Conflicts; 7 Design Decision Support Tools; 8 Summary; References; Chapter 11 Design for Manufacture and Assembly with Plastics; 1 Introduction; 2 Plastic Materials Selection
3 Plastic Materials Selection Techniques

Sommario/riassunto

Full coverage of electronics, MEMS, and instrumentation and control in mechanical engineering. This second volume of Mechanical Engineers' Handbook covers electronics, MEMS, and instrumentation and control, giving you accessible and in-depth access to the topics you'll encounter in the discipline: computer-aided design, product design for manufacturing and assembly, design optimization, total quality management in mechanical system design, reliability in the mechanical design process for sustainability, life-cycle design, design for remanufacturing processes, signal processing, data acquisition and dis
